

the antepenultimate segment; appendages (♀) short (3 mm.) foliaceous, broad, obtuse, wings hyaline. costa yellow; pterostigma elongated, fuscous; membranule blackish gray; the subnodal sector sometimes not bifurcated; 13-16 and 18 antecubitals; 10-12 postcubitals; 4-5 areoles beneath the pterostigma. Length 51-60 mm.; alar expanse 74-86 mm.; pterostigma 4 mm.

HAB. Labrador; Fort Resolution and Saskatchewan, Brit. Amer.; one ♂ White Mountains, N. H.

This species is very much like *A. borealis* from Europe; I am not able to separate the males, except that the τ spot on the front has a larger and more rounded head in *A. septentrionalis*; the appendages of the female are more

widely separated at the base, less broad and somewhat incurved in the European species. I consider the two species as local varieties, but owing to the obvious difference in the appendages of the females it seems more prudent to keep them separate for the present. I have compared 15 specimens of *A. septentrionalis* and 9 specimens of *A. borealis* from Lapland, Sweden, Silesia and Switzerland. Both are arctic species. Many years ago I saw a specimen from the Wilui River, Siberia, but this specimen is not at hand and as at that time I believed *A. sitchensis* to be the same species I am unable now to say if the Siberian specimen belongs to *A. borealis*.

DESCRIPTIONS OF SOME NEW NORTH AMERICAN DOLICHOPODIDAE.

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(Continued from p. 343.)

GYMNOPTERNUS POENITENS, n. sp. ♂

Length 2.75 mm.; length of wing 2.75 mm.

Dark metallic green. Face moderately broad, covered with hoary dust. Antennae black throughout, third joint large and of the usual shape, somewhat pointed and covered with conspicuous whitish pubescence; pubescence of the arista, which is inserted in the middle of the dorsal contour of the third joint, appressed and perceptible only with difficulty. Front rather dull metallic green; cilia of the in-

ferior orbit white. Thoracic dorsum shining blackish green, posteriorly with a brilliant golden reflection, apparently without any traces of dust. Scutellum blackish green with a golden reflection, bearing a few black hairs besides the usual setae. Pleurae anteriorly metallic greenish black, posteriorly black, overlaid with hoary dust. The yellow tegulae have black cilia. Abdomen blackish green, lacking the golden reflection of the thorax and scutellum; venter black, dusted with white; hypo-

pygium black; lamellae large, elongate oval, brownish yellow, posterior edges black, irregularly crenulated and fringed with weak black bristles; the numerous smaller and more concealed appendages of the hypopygium yellow. Coxae and legs black throughout; femora with a faint metallic green reflection. Fore legs smooth, tarsi equaling the tibiae in length; median femur with a preapical bristle, median tibia with two setae on its posterior face, separated by a distance equal to $\frac{1}{3}$ the length of the tibia; hind femur with a preapical bristle, hind tibia with four or five spines along its posterior face. Halteres pale dull yellow. Wings smoky gray, becoming almost black along the costal margin; veins black, the third and fourth longitudinal veins gently converging and, for a *Gymnopternus*, very closely approximated at their tips. Anal angle very obtuse, giving the wing a lanceolate outline.

HABITAT: Milwaukee Co., Wis.

Gymnopternus poenitens is to be admitted to the group comprising Loew's *G. scotias*, *G. barbatulus*, and *G. tristis*, all of which differ from the other described North American species of the genus in having the prevailing color of the feet black. *G. poenitens* differs from *G. scotias* in having the cilia of the inferior orbit white, the feet entirely black, the hypopygial lamellae large and in great part yellow; from *G. barbatulus* and *G. tristis*, *G. poenitens* differs in the more hairy third antennal joint and its completely black legs. Both of Loew's species also have the cilia of the inferior orbit black. The course of the third and fourth longitudinal veins is very different in *G. poenitens* from

what it is *G. tristis*, in which species, according to Loew, there is only a slight convergency, though he mentions in a note a male with a "considerably stronger convergency of the third and fourth longitudinal veins." He considers this specimen to be merely a striking variety of *G. tristis*.

CHRYSOTUS WISCONSINENSIS, n. sp. ♂. ♀.

Length 2.5-2.75 mm.; length of wing 2.-2.25 mm.

Splendid metallic green. Antennae entirely black; third joint small, rounded, rather hairy; eyes completely meeting on the face in the male; in the female the face broad, covered with silvery white dust, and crossed by a marked transverse ridge a little above the oral margin. Palpi black, small and somewhat concealed in the male; considerably larger and covered with silvery white dust in the female. Front broad in both sexes, triangular, widening towards the occiput, metallic green, inclining to violet, somewhat dimmed by a layer of fine dust; cilia of the superior orbit black, those of the inferior orbit glistening white. Thoracic dorsum and scutellum bright golden green, overlaid with a thin layer of yellowish white dust, which is thickest on the humeri: pleurae metallic green, rather thickly covered with white dust, cilia of the tegulae white. Abdomen bright golden green, rather thickly covered with black hairs; terminal segments more blackish; hypopygium of the male quite large, barely concealed, appendages glistening, black. Legs quite hairy; fore coxae yellow, their extreme bases metallic green in front; their tips with a tuft of black hairs. Anterior tarsi blackened from the tip of the second joint; hind legs somewhat robust, tarsi equaling the tibiae in length, black and quite hairy, only the base of the metatarsal

joint yellow; apical third of the tibia blackened. The mature male has a rather broad metallic black band around the apex of the hind femur, leaving only the extreme tip yellow. In the female and immature male this band is represented by a more or less distinct black or fuscous spot. In the male there are several (about six) robust spines on the posterior face of the hind tibia and three less conspicuous and obliquely inserted setae at the tip of each of the four posterior femora. Halteres bright yellow. Wings grayish hyaline with black veins; the posterior cross-vein is some distance in front of the centre of the wing.

HABITAT: Milwaukee Co., Wis.

The coloring as described above is constant in five males and three females in my collection. The species is allied to *Chrysotus pallipes*, Loew. It differs in having the eyes completely contiguous in the male and not separated by a linear white face, and in having the hind legs very differently colored. In Loew's species the hind legs are yellow; "even the tarsi are only slightly dusky towards the tip." Loew's specimens could hardly have been immature individuals of *C. wisconsinensis* as I have three immature specimens which differ from the mature ones only in having the shining black subapical band of the hind femora represented by a fainter spot.

CHRYSOTUS PRATICOLA, n. sp. ♂

Length 2.25 mm.; length of wing 2 mm.

Palpi brown; antennae black, third joint small, rounded, with apical arista. Face broad for a male *Chrysotus*, opaque black, as is also the front in my specimen. Cilia of the superior orbit black, those of the in-

ferior orbit sparse, whitish. Thoracic dorsum, scutellum and abdomen metallic green, rendered almost opaque by a thick layer of brown dust: pleurae opaque, black. Cilia of the tegulae pale yellowish. The sparse hairs covering the abdomen dirty white. Hypopygium black, concealed; venter of a paler and more bluish metallic green than the terga. Coxae opaque black, tipped with yellow and each provided with a tuft of glistening white hairs on the anterior face; these hairs are longest on the fore coxae. Legs not very hairy; femora black with metallic green lustre, especially on the hind pair; their apices and extreme bases yellow; tibiae yellow covered with short weak black hairs; tarsi yellow, blackened on all the feet from the tip of the first joint; hind tarsi scarcely as long as the hind tibiae. Halteres honey yellow. Wings hyaline, with very faint grayish tinge; veins black; the black costa is moderately incrassated from its juncture with the first longitudinal vein to the tip of the wing; towards which it gradually diminishes in thickness; posterior cross-vein in front of the middle of the wing.

HABITAT: Saline Co., Nebraska.

The moderately thickened costa, the broad face and the coloring of the femora place this species near Loew's *Chrysotus subcostatus*. From this species *C. praticola* may be distinguished by its very thick covering of brown dust and the pale hairs covering the abdomen. Perhaps a greater number of specimens than either Loew or I have had the opportunity to examine, may show the two species to be identical.

CHRYSOTUS CHORICUS, n. sp. ♂

Length 2. mm; length of wing 1.75 mm.

Bright metallic green. Palpi pale, fus-

cescent towards their bases. Face very narrow, the eyes almost meeting, covered with whitish dust. Antennae deep velvety black, first joint somewhat slender, third joint broad and hairy, ending anteriorly in a short and blunt point, above which is inserted the arista. Front metallic green, its edges at first parallel, then diverging posteriorly; cilia of the inferior orbit pale. Thoracic dorsum and scutellum bright metallic green, with scarcely any dust; pleurae greenish black, dusted with white. Tegulae with glistening white cilia. Abdomen short, cylindrical, and like the thoracic dorsum, bright metallic green, rather thickly covered with stiff black hairs; its terminal segments more blackish; appendages of the hypopygium pale, hairy. Coxae black, with yellow tips, the anterior pairs with tufts of rather long white hairs. Legs very hairy; femora shining metallic green, tips and extreme bases pale yellow; fore tibiae pale yellow; median tibiae growing blackish towards their apices. Anterior tarsi black excepting the base of the metatarsal joint, which is yellow; pulvilli not perceptibly enlarged. Hind legs more robust than the anterior, tibiae and tarsi shining blue-black; each femur with a row of black hairs, running from the base to the apex on the outer edge and increasing in length distally; hind tibiae and tarsi thickly clothed with rigid black hairs; the former with five spines on the posterior face, the latter robust, not perceptibly tapering till the fourth joint. Peduncles of halteres brown, capitula honey yellow; their tips sometimes blackened, more often only slightly infuscated. Wings grayish hyaline with black veins.

HABITAT: Milwaukee Co., Wis.

This species is related to *C. obliquus*, Loew, and somewhat more closely to *C. affinis* of the same author. It

differs from both in having the cilia of the tegulae white, from *C. obliquus*, also in the hirsuteness of the hind tibia and tarsus.

CHRYSOTUS PICTICORNIS, Loew. ♂ ♀

Length 1.5-2.25 mm.; length of wing 1.75-2. mm.

Palpi pale, somewhat blackened at their bases, and clothed with a few scattered, long blackish hairs; eyes contiguous on the face in the male; face of the female moderately broad, dusted with white and presenting near the oral margin a slight swelling, on each side of which, abutting on the orbit lies a small rectangular black spot. Antennae in both sexes with the basal joint pale yellow, the two apical joints deep black, clothed with rather abundant pale pubescence; arista inserted apically. Front and occiput metallic green, dulled by a layer of yellowish dust; cilia of the superior orbit black, those of the inferior orbit glistening white, very conspicuous in some specimens. Thoracic dorsum and scutellum metallic green, considerably dimmed by a layer of yellow dust, thickest on the anterior portion and on the humeri; pleurae metallic green, inclining to blackish, dusted with white. Tegular cilia black. Abdomen coppery green, not very vivid, with the incisures narrowly blackish, the terga covered with short pale hairs which appear black in some lights and are somewhat more appressed in the female than in the male; hypopygium inconspicuous, its longer appendages pale yellow. Legs pale yellow, moderately hairy; fore coxae blackened only at their extreme bases; posterior coxae with their basal halves blackened. Tarsi blackened only towards their tips. Hind femora with prominent preapical bristle. Halteres honey yellow. Wings grayish hyaline; posterior cross vein a considerable distance in front of the middle of the wing.

HABITAT : Milwaukee Co., Wis.

Loew's description of this insect is so brief, being taken from a single imperfectly preserved specimen, that I have seen fit to describe it again. The small size of the species, the pale color of the first antennal joint, which Loew describes as red, but which is really pale yellow in well-preserved specimens, and the locality (Loew's specimen was from Illinois) are proof sufficient that my specimens are true *D. picticornis*. The species is common in damp woods near Milwaukee.

DIAPHORUS SATRAPA, n. sp. ♂

Length 2 mm.; length of wing 1.75 mm.

Palpi rich brown; face narrow, covered with thick silvery white dust; antennae yellowish brown, hairy; third joint pointed (with dorsally inserted arista?) Front and occiput bronze black, with violet reflection, shifting to cupreous posteriorly, the surface covered with very fine appressed white hairs; inferior orbit thickly powdered with white dust; cilia glistening white. Thoracic dorsum vivid blackish bronze, with a shining violet patch on the disc, bordered on each side by a broad and obscurely defined cupreous band. Scutellum flattened, vivid bronze green. Pleurae bronze green, covered with silvery dust; there is a patch of thick white dust on the humerus, very conspicuous when the insect is viewed from above, and extending down to the insertion of the fore coxa. Tegulae pale yellow, with white cilia. Abdomen slender, covered with rather stout black hairs; basal segment bronze green; second and third segments pale yellow, the latter bronzed on its posterior border; remaining segments vivid blackish bronze; hypopygium brownish, scarcely protruding, covered with pale yellow hairs. Coxae and feet pale yellow,

somewhat slender and not very hairy; fore coxae bearing on their anterior faces several long yellowish brown hairs; median coxae similarly adorned, one of the hairs, however, is very long and blackish; median femur with two stout blackish spines near the apex. Fore and median tarsi blackened towards their tips, the former very slightly, the latter more conspicuously. Hind legs only moderately hirsute; apical half of each femur brown on the upper face; tibiae brownish and the tarsi, excepting the extreme base of the first joint, deep brown. Halteres honey yellow. Wings more brownish than grayish hyaline, owing to the brown veins and the rather thick covering of microscopic brown hairs; posterior cross-vein very near the middle of the wing; third and fourth longitudinal veins gently curved but still parallel; anal angle not prominent as in several other species of the genus.

HABITAT : Saline Co., Nebraska.

My single specimen of this beautiful *Diaphorus* has lost the tips of the antennae and of several of the tarsi, so that I can assert nothing in regard to the insertion of the arista or the development of the pulvilli. The other form-characters, however, agree so well with those of other species of *Diaphorus* that I do not hesitate to assign it to this genus. The color of the abdomen is very unlike that of any described North American *Diaphorus*, but approaches the European *D. tripilus*, Loew, *D. hoffmannseggii*, Meigen and *D. oculus*, Meigen, being closely allied to the latter. These European species form a subgeneric group characterized by the more or less extended yellow band encircling the base of the abdomen. Heretofore no members of

this group have been described from America; in all of Loew's species the abdomen is metallic green (or in *D. opacus* black) throughout. Loew recognized the fact that the American *diaphori* are especially heterogeneous, but with his usual fine judgment declined to resolve the genus into several. Such an attempt even at the present time, would be unwise, as I am convinced that there are still many North American species awaiting description.

DIAPHORUS PALPIGER, n. sp. ♂

Length 2.75 mm.; length of wing 2.5 mm.

Palpi very prominent, as long as the face, from the insertion of the antennae to the oral margin; glistening white, golden yellow at their bases, with a few long silvery hairs on their edges. Face broad, covered with yellow dust and presenting a somewhat shallow, v-shaped depression near the oral margin. Antennae black, apical joint more piceous, hairy, twice as broad as long, reniform with subapical arista. Front and occiput broad, without any tendency to contiguity in the eyes, covered with the same glistening yellowish dust as the face; cilia of the superior orbit short and black, those of the inferior orbit very long and silvery white, forming a conspicuous, though not very dense beard when the head is seen in profile. Thorax and scutellum golden green, their brilliancy much subdued by a thick layer of yellow dust most abundant on the anterior half of the thoracic dorsum and on the lateral corners of the scutellum; pleurae greenish black, dusted with white, the yellow dust of the thoracic dorsum extending over the humeri on to the anterior pleurae a short distance. Tegulae pale yellow with yellow cilia. Abdomen metallic green, not vivid and less golden than the thorax

and scutellum; intersegmental incisures narrowly black as are also the short robust hairs covering the segments; hypopygial appendages pale yellow. Coxae concolorous with the pleurae, dusted with white. Femora slightly enlarged, black on their inner and lower faces, which are dusted with white but metallic green on their upper faces; knees rather broadly pale yellow; tibiae and tarsi black, inclining to piceous at the joints; pulvilli dilated on all the feet. An even row of bristles runs the full length of the under surface of the fore femur, and a long and stout bristle projects from the anterior face of the median trochanter. Posterior legs hirsute; besides the usual short bristles clothing the tibiae, there is a row of prominent bristles on their anterior and posterior faces. Halteres honey yellow. Wings grayish hyaline, third and fourth longitudinal veins gently converging near the apex of the wing, but becoming parallel just before their termination; anal angle not very prominent; sixth longitudinal vein distinct.

HABITAT: Milwaukee Co. Wis.

This species is so different from all the species described by Loew, that no difficulty will be experienced in recognizing it. Its dark colored legs and pale tegular cilia place it in the group comprising Loew's *D. leucostomus* and *D. interruptus*. The lack of a conspicuous point to the third antennal joint immediately distinguishes it from the former, while the uninterrupted fourth longitudinal vein as readily distinguishes it from the latter.

DIAPHORUS RAUTERBERGI, n. sp. ♂.

Length 3 mm.; length of wing 2.5 mm. Palpi small, fuscous with paler edges. Face somewhat narrowed below, evenly rounded without any indication of a transverse swell-

ing, covered with coarse yellowish dust. Antennae black, basal joint short, third joint large, hairy, much shortened and expanded so as to appear kidney-shaped; arista apparently with apical insertion. Front subquadrate, together with the occiput covered with coarse yellowish dust; cilia of the superior orbit short and black; those of the inferior orbit long and conspicuous, of a yellowish tint. Thoracic dorsum, scutellum and abdomen metallic green, covered with coarse yellow dust, which is very thick on the thorax and scutellum, but much less so on the abdomen. Pleurae black, dusted with white, the anterior portions more metallic green. Tegular cilia pale yellow, appearing brown in some lights. Abdomen covered with short black hairs, which are almost lacking on the terminal segment where they are prominent in other species; hypopygium black, the tips of the concealed appendages pale yellow. Coxae black, dusted with white. Femora vivid metallic green, broadly tipped with yellow; tibiae and tarsi yellow, the latter with enlarged pulvilli on all the feet; anterior tarsi blackened from the tip of the first joint; hind tarsi brown from the tip of the first joint, only the last joint more blackish. The black hairs and spines on the legs of about the usual length. Halteres honey yellow. Wings grayish hyaline, with brown veins, which become yellow towards their origin; third and fourth longitudinal veins nearly parallel on the apical third of the wing; posterior cross-vein at about the middle of the wing; anal angle not very prominent.

HABITAT: Saline Co., Nebraska.

The peculiar configuration of the third antennal joint readily distinguishes this species from *D. leucostomus*, to which it is in most other respects closely affiliated.

PORPHYRIPS LONGIPES, LOEW. ♂.

Length 3.5 mm; length of wing 3 mm.

Palpi black, with a few rather long black

hairs. Face narrow, silvery white; antennae black, basal joint smooth and rather slender; third joint flattened, lanceolate, a little more than twice as long as broad at the base, covered with short and even pubescence, apex somewhat rounded; arista straight, distinctly longer than the whole antenna, with appressed scarcely perceptible pubescence. Front and occiput metallic green, slightly dimmed by a layer of whitish dust; cilia of the superior orbit black, those of the inferior orbit silvery white, abundant and increasing in length towards the oral orifice. Thoracic dorsum and scutellum dark metallic green, shining sometimes with a slight cupreous reflection; the former with traces of white dust lines on its anterior part; pleurae greenish black, overlaid with whitish dust. Tegulae pale yellow with silvery white cilia. Abdomen concolorous with the thoracic dorsum, terminal segments more violaceous; the hairs with which it is rather abundantly covered are black, except on the lateral surfaces of the basal segments where they are long, tufted and silvery white; hypopygium shining black, the external appendages long and filiform, sometimes coiled up in dry specimens, pale yellow, strongly infuscated at their edges and clothed with conspicuous black and white hairs; claspers and internal appendages blackish. Coxae blackish green, tipped with pale yellow, each bearing on its anterior face a tuft of silvery white hairs, which are longest and most abundant on the fore pair. Legs hairy; the fore and medium pairs pale yellow, the former with the femora blackish green, excepting their bases and apices; tarsi blackened from the tip of the first joint; metatarsal joint of the fore feet hardly as long as the remaining tarsal joints taken together; there are several long white hairs on the posterior faces of the fore femora; median femora somewhat longer and more slender than the fore femora; hind legs elongated, femora, tibiae and basal tarsal joints incrassated, deep black with the exception of the basal halves of the femora,

which are pale yellow; the hind tarsi though incrassated at the base taper evenly to the last joint. Halteres honey yellow. Wings somewhat lanceolate at their bases, gray, with blackish veins; the third and fourth longitudinal veins at first converge gently, but on approaching the tip of the wing become parallel, the fourth terminating a very short distance in front of the tip.

HABITAT: Milwaukee Co., Wis.

The three males in my collection agree with the above description, which will be found to differ somewhat from Loew's account (Monograph, p. 340, also *Centuria* 5. 92). The less pigmented hind legs in Loew's specimen, taken in the White Mountains, may have been due to immaturity. I believe that my specimens represent the normal adult male, though it is, of course, possible that they may belong to a western variety with highly pigmented hind legs. Be this as it may, the differences seem hardly of specific value.

SYNARTHUS CINEREIVENTRIS, LOEW. ♂.

To Loew the male of this species was unknown. It differs from the female as described by that dipterologist, only in the structure of the antennae and the spinulation of the legs, the coloring of my specimen answering perfectly to the color-description of the female. The first antennal joint is rather slender, especially at its base, the second overlaps the inner side of the third by a large rounded flap as in the female; the third joint is long and tapers slowly to an acute

point in such a manner as to have the contour of its dorsal side remain straight or slightly concave, while the contour of its ventral edge is convex; the pubescence covering the joint is shorter and less conspicuous than in *S. barbatus*, Loew; the arista which is a little over half as long as the antenna, is rather delicate and clothed with scarcely perceptible pubescence. The spinulation of the legs in the female is not described by Loew, probably because it presented nothing worthy of remark. The male has a delicate and rather long spine projecting from the upper surface of the tip of the median femur, while there are six or seven short, stiff and evenly graduated spines before the middle of its under surface; the inner face of the median tibia has three widely separated black spines; the posterior face of each of the hind tibiae is armed with about eight equidistant black spines, besides the regular rows of shorter and smaller spines; the two spurs at the apex are powerfully developed, of equal length, and, in my specimen, directed at right angles to the long axis of the tibia; hind metatarsal joint with several prominent spines on its under surface; on the inner face of its proximal end a peculiar sickle-shaped spine, bent back in the opposite direction to all the other spines, so that its curved and pointed end comes to lie near the tip of the tibia. This peculiar spine is inserted near the middle of the metatarsal joint, to the surface of which it is applied for some little distance. The abdomen is small, with small, black, and in my specimen, much concealed hypopygium. Length 2.5 mm.; length of wing 2.5 mm.

HABITAT: Milwaukee Co., Wis.

(To be concluded.)